OWNER'S OPERATING MANUAL

Uninterruptible Power Supply Models:

SG800-1, SG800-2
SG1K-1T, SG1K-2T
SG2K-1T, SG2K-2T, SG2K-2TXI
SG3K-1T, SG3K-2T, SG3K-2TX

Detailed SG Series product specifications are available in PDF format at www.falconups.com

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OM48021-1-3K Rev. F

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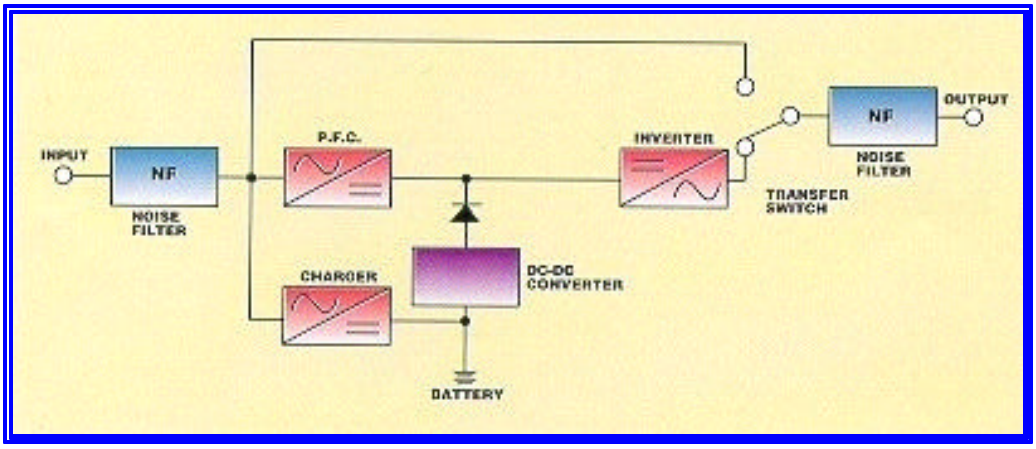
SG SERIES UPS FEATURES

- **True Double Conversion On-Line Design**
- **Input Power Factor Correction**
- **Wide Input Voltage Window**
- **Pure Sinewave Output**
- **Precision Output Voltage Regulation**
- **Superior Brownout, Surge and Transient Protection**
- **Internal System Bypass**
- **Eliminates Generator Frequency & Voltage Drift**
- **Microprocessor Control & RS-232 Communications**
- **UPSILON® Monitoring & Shutdown Software**
- **Optional Frequency Conversion**
- **Optional Extended Battery Packs & Chargers**
- **Optional External Maintenance Bypass Switch**
- **Optional Internal SNMP/HTTP Interface Card**
- **Two-Year Warranty**

SG SERIES ON-LINE UPS SYSTEM BLOCK DIAGRAM



IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

This manual contains important instructions which must be followed during the installation, operation and maintenance of this UPS and its batteries. Please read all instructions before operating this equipment and save this manual for future reference.

CAUTION

All of the models presented herein are designed for installation and use in a temperature controlled environment, free of contamination.

CAUTION

This UPS utilizes voltage that may be hazardous. Do not attempt to disassemble. This unit contains no user replaceable parts. **Refer all servicing to Falcon Electric, Inc.**

CAUTION

THIS UPS IS NOT INTENDED TO BE USED IN CONJUNCTION WITH LIFE SUPPORT OR OPERATING ROOM EQUIPMENT.

CAUTION

Always unplug this UPS and remove the UPS battery fuse prior to cleaning and never apply liquid or spray detergent on the UPS.

CAUTION

Never attempt to service batteries. High voltage exists within the unit, which could cause electrical shock. Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions. Keep unauthorized personnel away from batteries. When replacing the UPS batteries, use the same number and type of batteries.

IMPORTANT

Allow at least 24 hours, after the UPS is first installed and turned on, to fully charge the internal battery and assure the maximum backup time is available.

DO NOT

DO NOT plug this UPS into its own output as this may damage the UPS.

CAUTION

DO NOT remove or unplug the input cord when the UPS is turned on. This removes the safety ground from the UPS and the equipment connected to the UPS.

CAUTION

This UPS contains its own energy source (batteries). The output receptacles may carry live voltage even when the UPS is not connected to an AC source.

IMPORTANT

Should any SG Series UPS units be stored for more than two weeks, it is mandatory that the battery fuse be removed prior to storage or battery damage will result.

CHAPTER 1

SG Series UPS - Overview

True Regenerative On-Line Design

As new and innovative technologies have become the backbone of today's businesses, maximum system availability is critical and downtime is more expensive than ever. Increasingly, businesses need a UPS that not only protects against blackouts, but also virtually eliminates more frequent and subtle power disturbances. Surges, sags, line noise and brownouts can disrupt proper operation of sensitive equipment. These disturbances may also create unnecessary production, service, and data recovery costs.

A True Regenerative On-Line UPS provides the highest level of protection against the widest spectrum of power problems. The incoming AC utility source is converted to a regulated DC voltage. From this DC voltage, a new AC voltage is regenerated, providing continuous, clean, tightly regulated power to your equipment. Line-interactive and Off-line designs leave your equipment connected directly to dirty utility power. They only provide minimal transient, voltage and backup protection. If your equipment operation is "Mission Critical", a true double conversion On-Line UPS, such as Falcon® Electric's SG Series™ UPS Plus®, is the only clear choice.

Input Power Factor Correction

All SG Series UPS Plus models include state-of-the-art Input Power Factor Correction. This greatly reduces the amount of current demanded from your building wiring system, yielding a highly efficient, "building friendly" UPS.

Microprocessor Control

Falcon Electric's SG Series UPS incorporates advanced microprocessor technology. This technology makes possible a high level of internal UPS control and management. With the supplied UPSILON® software, all SG Series UPS models support unattended shutdown, management, data logging, and self-diagnostics. The software supports MS Windows® 95, 98, NT, 2000, 2000 Server, ME, XP, Novell Netware® 5 & 6, LINUX and FreeBSD. UPSILON for UNIX supports most popular UNIX platforms and OS versions.

SNMP/HTTP Remote Management Support

Our SNMP/HTTP Agent board provides remote management and monitoring over any Ethernet LAN, WAN or the Internet utilizing a 10BaseT-type connection. The optional SNMP/HTTP agent installs via an option slot located behind a cover plate on the back panel of every SG Series model.

Extended Battery Bank Option

All SG Series models have a continuous duty inverter and support the addition of optional external battery/charger packs. Whether your application requires a few additional minutes or hours, the SG Series will be ready. Falcon also offers optional battery charger upgrades for faster recharging. Please specify your extended battery and charger requirements at the time of your initial order.

Frequency Converter Option

With a factory modification at the time of order, any SG Series model can be configured for use as an international frequency converter. This makes the SG Series UPS Plus an ideal choice for worldwide power applications. Without this modification, all SG series models will detect the incoming utility line frequency and automatically set its output frequency to match.

CHAPTER 2

INSTALLATION INSTRUCTIONS

1. Verify the following is included in the UPS shipping carton:
   (1) UPS, (1) Software Diskette(s) & Manual, (1) Power Cord (800VA-1KVA models only), (1) Owners Manual & (1) UPS/Computer Cable.

2. Verify the UPS unit is configured for the proper input/output voltage and frequency. This information is stated on the nameplate label located on the rear or the side panel of the unit. If any special input plug and output receptacle configurations were specified at the time of order, verify for proper configuration.

3. Set the Dip switches located on the UPS rear panel for the nominal UPS output voltage desired. **See the dip switch setting tables located on page 6**.

   In most cases the nominal UPS output voltage should be set to match the incoming utility voltage. This will assure a close matching voltage in the event the UPS is placed on bypass. **NOTE: Disregard the "ON" marking on the side of the actual dip switch housing; use the tables in this manual or the silkscreen on the UPS rear panel only.**

   Dip switch 3 "enables" or "disables" the "Green Mode" function. The UPS is shipped from the factory with the switch set in the "disabled" position (up). If SW3 is switched down or to the "enabled" position, the Green Mode function is activated. When the load connected to the output of the UPS drops to under 10% of the full rated UPS output for 30 seconds, the UPS is automatically placed into bypass and the inverter is turned off. **NO BATTERY BACKUP IS PROVIDED AFTER THE GREEN MODE HAS ACTIVATED.**

   Dip switch settings must be made while the UPS is turned off. Any changes made while the UPS is turned on will not take effect until the UPS is turn off and back on again since the switch settings are read by the microprocessor only during initial UPS power up.

4. To prevent accelerated battery discharge during shipment, the 1-3Kva models have had the battery fuse removed. INSTALL THE BATTERY FUSE PRIOR TO TURNING ON THE UPS CIRCUIT BREAKER. A popping sound may be heard, which is normal.

CAUTION

NEVER REMOVE THE BATTERY FUSE OR TURN THE BATTERY CIRCUIT BREAKER OFF WHILE THE UPS AC CIRCUIT BREAKER IS TURNED ON AND OPERATING FROM THE UTILITY VOLTAGE OR UPS DAMAGE WILL RESULT. UPS MUST BE COMPLETELY SHUT DOWN PRIOR TO DISABLING THE INTERNAL BATTERY SUPPLY.

CAUTION

In the event this UPS is to be turned off or stored for more than two weeks, the battery fuse must be removed to prevent battery discharge. If placed in long-term storage, every four months the UPS must be plugged in and turned on for 24 hours to allow the batteries to recharge and prevent battery damage. Failure to follow these procedures will invalidate your warranty.

5. For SG800 - SG1K models, connect the power cord to the UPS inlet located on the UPS rear panel. On SG1.5K - SG3K models the line cord is permanently attached to the UPS.

6. Select a suitable location for the UPS near enough to the computer or equipment to to be protected. Connect the power cord(s) for the equipment to be protected to the UPS output receptacles.
VERIFY THE TABLE OR SURFACE SUPPORTING THE UPS WILL SUPPORT THE WEIGHT OF THE UPS AND ANY OPTIONAL EXTENDED BATTERY BANKS.

800VA-1KVA UPS MODELS = 33 lbs. (14.9 kg)
1.5KVA- 2KVA UPS MODELS = 68.4 lbs. (31 kg)
3KVA UPS MODELS = 81.4 lbs. (37 kg)
MINI-TOWER EXTENDED BATTERY BANKS = 123 lbs. (55.8 kg) MAX. (EACH BANK)
FLOOR STANDING EXTENDED BATTERY BANKS = 363 lbs. (165 kg) MAX. (EACH BANK)

7. If extended battery banks are to be connected to the UPS, please refer to page 8 for further instructions.

8. If unattended computer shutdown and monitoring are desired, connect the green UPS/Computer cable to the DB-9 connector located on the UPS rear panel. Then install the shutdown and monitoring software provided with the UPS. For your reference, UNIX shutdown and monitoring software is available from Falcon Electric at an additional cost.

9. Verify the location selected has adequate ventilation to allow for the proper cooling of the UPS.
DO NOT BLOCK UPS FANS OR AIR VENTS. THE UPS MUST NOT BE INSTALLED IN AN ENCLOSED AREA.

11. Plug the UPS power cord into the nearest grounded wall outlet. SG1K-2T 208-240V models will automatically turn on Since they do not have an input circuit breaker. For all other SG models, go to step 12.

12. Turn the input circuit breaker located on the UPS rear panel to the “on” position. The internal UPS fan and front panel "line" indicator should turn on, followed by the "bypass" LED, and after several seconds, the "inverter" LED.

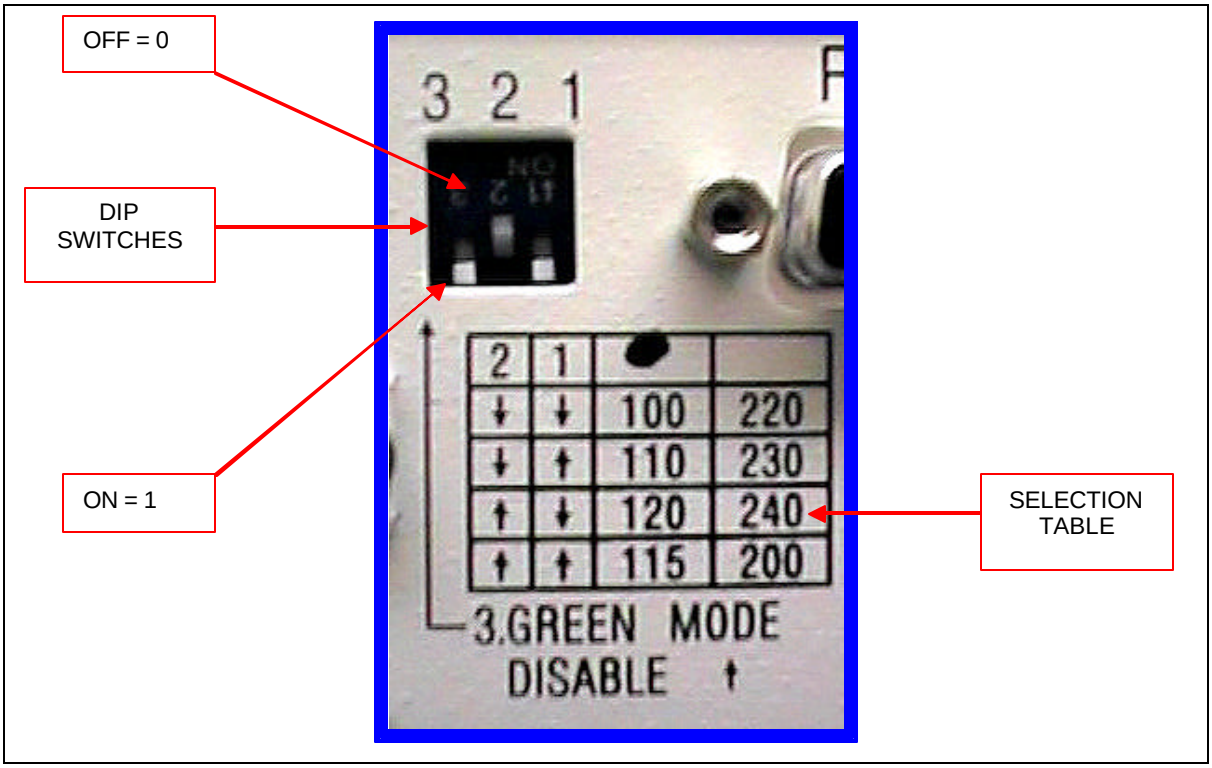
13. Turn on the connected equipment and verify the UPS does not go into overload by observing the front panel load indicator LEDs.

14. The UPS, optional external battery bank(s) and additional chargers should be plugged in and turned on for 24 hours to charge the batteries. During this initial 24 hour charging period, battery backup time may be substantially reduced.

IMPORTANT

TO TURN OFF THE UPS, SWITCH OFF THE INPUT CIRCUIT BREAKER LOCATED ON THE UPS REAR PANEL AND PRESS THE ON/OFF BUTTON LOCATED ON THE UPS FRONT PANEL UNTIL THE UPS BEEPS. THE UPS WILL RUN FOR ABOUT 30 SECONDS AND SHUTDOWN. DO NOT PRESS THE ON/OFF BUTTON OR TURN THE CIRCUIT BREAKER ON AGAIN DURING THE SHUTDOWN PROCESS OR THE UPS WILL GO TO AN ALARM CONDITION, WARNING THAT THE UPS WAS NOT SHUTDOWN PROPERLY. SHOULD THIS OCCUR, TURN OFF THE INPUT CIRCUIT BREAKER AGAIN AND WAIT UNTIL THE UPS SHUTS DOWN.

VIEW OF DIP SWITCHES LOCATED ON THE UPS REAR PANEL



SWITCH SETTINGS FOR -1 MODELS

SW2	SW1	VOLTAGE
Down	Down	100V
Down	Up	110V
Up	Down	120V
Up	Up	115V

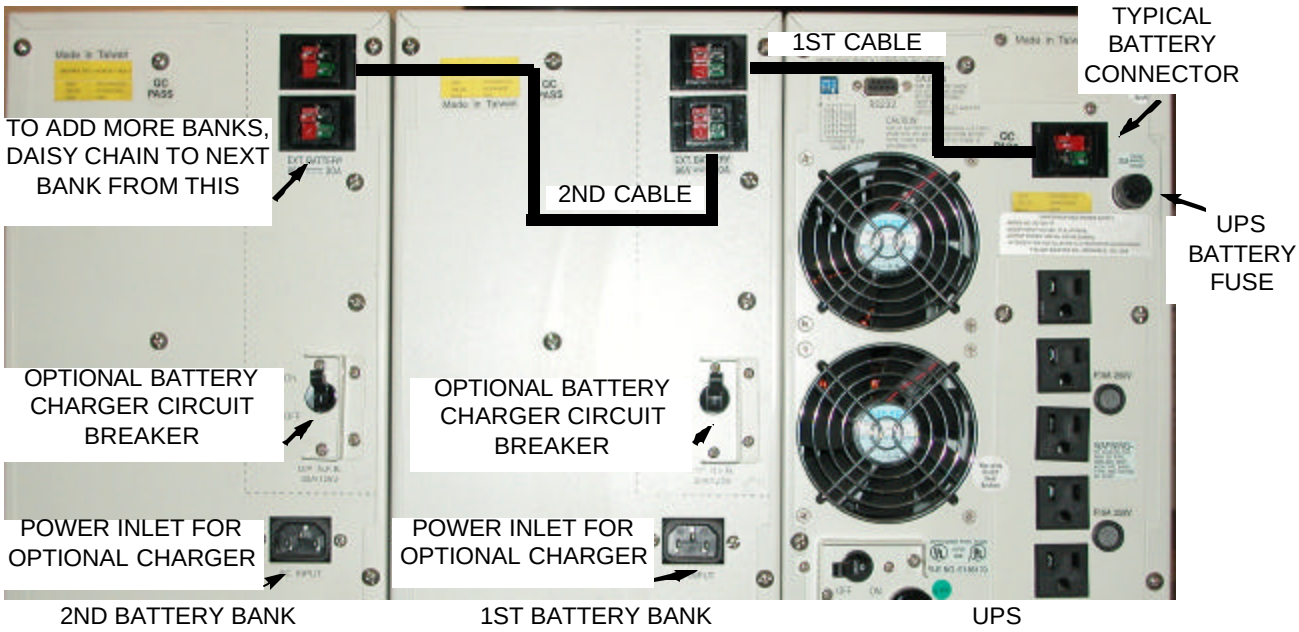
SWITCH SETTINGS FOR -2 MODELS

SW2	SW1	VOLTAGE
Down	Down	220V
Down	Up	230V
Up	Down	240V
Up	Up	200V

GREEN MODE SWITCH SETTINGS FOR ALL MODELS

SW3	FUNCTION
Down	GREEN MODE ON
Up	GREEN MODE OFF

TYPICAL EXTENDED BATTERY BANK & UPS INTERCONNECTION
(Mini-tower models shown; same applies for floor standing banks)


TYPICAL BATTERY CONNECTOR
1ST CABLE
TO ADD MORE BANKS, DAISY CHAIN TO NEXT BANK FROM THIS
2ND CABLE
UPS BATTERY FUSE
OPTIONAL BATTERY CHARGER CIRCUIT BREAKER
OPTIONAL BATTERY CHARGER CIRCUIT BREAKER
POWER INLET FOR OPTIONAL CHARGER
POWER INLET FOR OPTIONAL CHARGER
2ND BATTERY BANK
1ST BATTERY BANK
UPS

INSTALLATION PROCEDURE FOR EXTENDED BATTERY BANKS

1. Remove the battery fuse located on the UPS rear panel. See illustration above.
2. Locate the battery interconnect cable(s).
3. Connect one end of the battery interconnect cable to the the UPS battery connector. Connect the other end of the cable to the top battery connector on the first battery bank. See illustration above.
4. If a second battery bank is to be connected, connect one end of the second battery interconnect cable to the bottom battery connector on the first battery bank and connect the other end of the cable to the top battery connector of the second battery bank. (See illustration above.)
5. Follow the instructions in the proceeding step for additional battery banks.
6. Reinstall the battery fuse. **A popping sound may be heard when inserting the fuse. This is normal as the battery banks are pre-sharing the UPS.**
7. For all battery banks that have the battery charger option installed from the factory, perform the following:
    a. Verify the battery charger circuit breaker is in the off (down) position.
    b. On the battery bank nameplate label located on the rear panel, verify the battery charger input voltage matches your utility source (120Vac or 230Vac).
    c. Connect the input line cord(s) to the battery bank(s) power inlet.
    d. Plug the other end of the power cord into a utility receptacle.
    e. Turn on the battery charger circuit breaker(s) (up).
    f. The batteries in the external battery banks are now being charged.

NOTE: **Internal battery bank chargers do not charge the batteries inside the UPS.**

NOTE: When the battery banks and UPS need placed shutdown for more than two weeks, turn off the battery charger circuit breaker, disconnect the interconnecting cables and remove the battery fuse from the UPS battery or damage may occur.

8. RETURN TO PAGE 5, Paragraph 8 FOR FURTHER INSTALLATION INSTRUCTIONS.

EXTENDED BATTERY BANK SELECTION GUIDE

FOR 800VA-1KVA MODELS

BATTERY OPTION MODELS W/O Charger	SGB2S7-1K3	SGB4S7-1K3	SGB5S7-1K3	SGB10S7-1K6	SGB10S7-1K6
BATTERIES	6 Pieces 12V, 7AH	12 Pieces 12V, 7AH	15 Pieces 12V, 7AH	30 Pieces 12V, 7AH	60 Pieces 12V, 7AH
BATTERIES IN UPS	3 Pieces of 12V, 7AH				
# of CASES Inches (mm)	1 Mini-Tower 13.8 x 7.6 x 18.9 (350 x 193 x 480)	1 Mini-Tower 13.8 x 7.6 x18.9 (350 x 193 x 480)	1 Mini-Tower 13.8 x 7.6 x18.9 (350 x 193 x 480)	1 Floor Standing 32.1 x 10.2 x 21.8 (814 x 259 x 554)	1 Floor Standing 32.1 x 10.2 x 21.8 (814 x 259 x 554)
RUN TIME @ 100W	215 Min.	390 Min.	480 Min.	960 Min.	2000 Min.
RUN TIME @ 200W	107 Min.	210 Min.	255 Min.	520 Min.	1070 Min.
RUN TIME @ 400W	149Min.	96 Min.	120 Min.	255 Min.	550 Min.
RUN TIME @ 700W	723Min.	50 Min.	140 Min.	140 Min.	260 Min.
CHARGER OPTION INFORMATION					
BATTERY OPTION MODELS With 120Vac Charger	SGB2S7-1K3-1	SGB4S7-1K3-1	SGB5S7-1K3-1	SGB10S7-1K6-1	SGB10S7-1K6-1
BATTERY OPTION MODELS With 200-240Vac Charger	SGB2S7-1K3-2	SGB4S7-1K3-2	SGB5S7-1K3-2	SGB10S7-1K6-2	SGB10S7-1K6-1
CHARGER OUTPUT	41.1Vdc @ 4.5A	41.1Vdc @ 4.5A	41.1Vdc @ 4.5A	41.1Vdc @ 4.5A	41.1Vdc @ 4.5A
# OF CHARGERS	1	1	1	2	4

FOR 1.5KVA-2KVA MODELS

BATTERY OPTION MODELS W/O Charger	SGB2S7-2K3	SGB2S7-2K3	SGB5S7-2K6	SGB2S7-2K3	SGB5S7-2K6	SGB5S7-2K6
BATTERIES	12 Pieces of 12V, 7AH	24 Pieces of 12V, 7AH	30 Pieces of 12V, 7AH	36 Pieces of 12V, 7AH	60 Pieces of 12V, 7AH	90 Pieces of 12V, 7AH
BATTERIES IN UPS	6 Pieces of 12V, 7AH					
# of CASES Inches (mm)	1 Mini-Tower 13.8 x 7.6 x 18.9 (350 x 193 x 480)	2 Mini-Towers 13.8 x 7.6 x 18.9 (350 x 193 x 480)	1 Floor Standing 32.1 x 10.2 x 21.8 (814 x 193 x 554)	3 Mini-Towers 13.8 x 7.6 x 18.9 (350 x 193 x 480)	2 Floor Standing 32.1 x 10.2 x 21.8 (814 x 193 x 554)	3 Floor Standing 32.1 x 10.2 x 21.8 (814 x 193 x 554)
RUN TIME @ 300W	170 Min.	310 Min.	390 Min.	470 Min.	760 Min.	1200 Min.
RUN TIME @ 500W	95 Min.	180 Min.	225 Min.	260 Min.	465 Min.	690 Min.
RUN TIME @ 700W	63 Min.	120 Min.	155 Min.	185 Min.	320 Min.	490 Min.
RUN TIME @ 1000W	39 Min.	79 Min.	100 Min.	120 Min.	215 Min.	330 Min.
RUN TIME @ 1400W	24 Min.	51 Min.	64 Min.	80 Min.	140 Min.	225 Min.
CHARGER OPTION INFORMATION						
BATTERY OPTION MODELS With 120Vac Charger	SGB2S7-2K3-1	SGB2S7-2K3-1	SGB5S7-2K6-1	SGB2S7-2K3-1	SGB5S7-2K6-1	SGB5S7-2K6-1
BATTERY OPTION MODELS With 208-240Vac Charger	SGB2S7-2K3-2	SGB2S7-2K3-2	SGB5S7-2K6-2	SGB2S7-2K3-2	SGB5S7-2K6-2	SGB5S7-2K6-2
CHARGER OUTPUT	82.5Vdc @ 4A	82.5Vdc @ 4A	82.5Vdc @ 4A	82.5Vdc @ 4A	82.5Vdc @ 4A	82.5Vdc @ 4A
#. OF CHARGERS	1	1	1	1	2	3

FOR 2.5KVA-3KVA MODELS

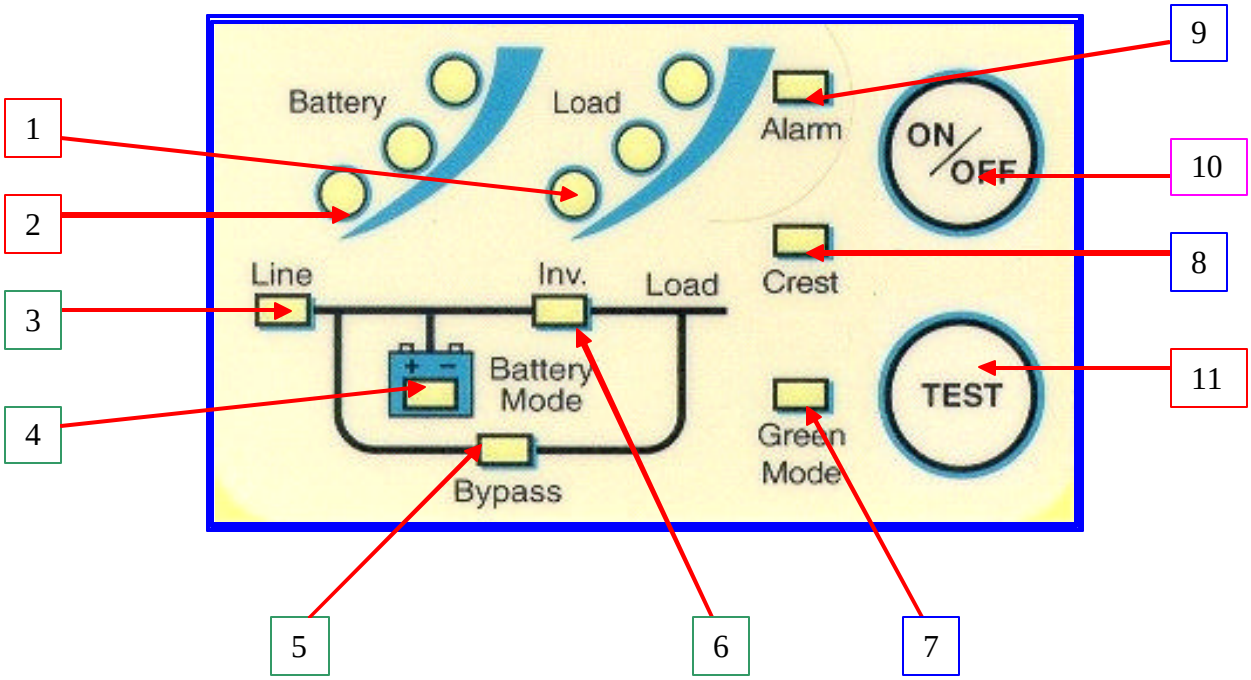
BATTERY OPTION MODELS W/O Charger	SGB2S7-3K3	SGB2S7-3K3	SGB5S7-3K6	SGB2S7-3K3	SGB5S7-3K6	SGB5S7-3K6
BATTERIES	16 Pieces 12V,7AH	32 Pieces 12V, 7AH	40 Pieces 12V, 7AH	48 Pieces 12V, 7AH	80 Pieces 12V, 7AH	160 Pieces 12V, 7AH
BATTERIES IN UPS	8 Pieces of 12V, 7AH					
# of CASES H x W x D Inches (mm)	1 Mini-Tower 13.8 x 7.6 x 18.9 (350 x 193 x 480)	2 mini-Towers 13.8 x 7.6 x 18.9 (350 x 193 x 480)	1 Floor Standing 32.1 x 10.2 x 21.8 (814 x 259 x 554)	3 Mini-Towers 13.8 x 7.6 x 18.9 (350 x 193 x 480)	2 Floor Standing 32.1 x 10.2 x 21.8 (814 x 259 x 554)	4 Floor Standing 32.1 x 10.2 x 21.8 (814 x 259 x 554)
RUN TIME @ 500W	135 Min.	260 Min.	310 Min.	380 Min.	640 Min.	1350 Min.
RUN TIME @ 1000W	59 Min.	115 Min.	140 Min.	170 Min.	300 Min.	620 Min.
RUN TIME @ 1500W	33 Min.	68 Min.	84 Min.	105 Min.	190 Min.	400 Min.
RUN TIME @ 2100W	20.5 Min.	43 Min.	57 Min.	69 Min.	125 Min.	270 Min.
CHARGER OPTION INFORMATION						
BATTERY OPTION MODELS With 120Vac Charger	SGB2S7-3K3-1	SGB2S7-3K3-1	SGB5S7-3K6-1	SGB2S7-3K3-1	SGB5S7-3K6-1	SGB5S7-3K6-1
BATTERY OPTION MODELS With 208-240Vac Charger	SGB2S7-3K3-2	SGB2S7-3K3-2	SGB5S7-3K6-2	SGB2S7-3K3-2	SGB5S7-3K6-2	SGB5S7-3K6-2
CHARGER OUTPUT	110Vdc @4.5A	110Vdc @4.5A	110Vdc @4.5A	110Vdc @4.5A	110Vdc @4.5A	110Vdc @4.5A
# OF CHARGERS	1	1	1	1	2	4

NOTE: The backup times stated are for reference only. Backup time may vary due to the type of load, battery age or condition, environmental conditions, etc.

CHAPTER 3

OPERATION

UPS FRONT PANEL INDICATOR AND FUNCTION KEYS



1. LOAD LEVEL INDICATOR LEDS

*The first or bottom LED is lit when the output load is greater than 25% of the rated output of the UPS.
*The second LED is lit when the output load is greater than 50% of the rated output of the UPS.
*The third LED is lit when the output load is greater than 75% of the rated output of the UPS.

2. BATTERY LEVEL INDICATOR LEDS

*The third or top LED is lit when the battery is fully charged.
*The Second LED is let when the battery level is above the low battery warning Level.
*The first LED is lit when the battery level is above the battery cutoff voltage.

3. LINE / SITE WIRING FAULT INDICATOR LED

For models configured for standard 120 volt domestic usage, this LED is lit to a steady on state when Utility voltage is present. However, should the LED flash on and off, it is an indication that the HOT and NEUTRAL wires are reversed some where in the building wiring. Typically at the wall outlet.
It is normal for this LED to flash with 208 and 240 volt domestic models as these voltages are normally LINE to LINE, without a neutral.

4. BATTERY MODE INDICATOR LED

This LED is lit when the unit is operating from battery.

5. BYPASS INDICATOR LED

When this LED is lit the UPS bypass is active. Should the Alarm LED be lit at the same time, the UPS detected an internal failure and the UPS must be serviced.

6. INVERTER INDICATOR LED

When this LED is lit, the UPS inverter is operating and powering the connected load.

7. GREEN MODE LED INDICATOR

This LED is lit when the connected output load of the UPS drops to under 10% of the full rated output of the UPS, providing SW3 is in the "down" position (Green Mode Enabled) as shown on page 7. The UPS is automatically set to bypass mode and the inverter is turned off, reducing the power requirement. **NO BATTERY BACKUP IS PROVIDED IN THIS MODE.** (The UPS is shipped from the factory with SW3 in the "up" or disabled position.)

8. OVER CREST INDICATOR LED

This LED lights when the connected load getting close to the peak current rating of the UPS.

9. ALARM INDICATOR LED

This LED is lit during the following conditions:

a. The inverter voltage is too high or low.
b. UPS over-temperature condition.
c. The battery voltage is too high.
d. The internal DC Bus has an under or over voltage condition.
e. The internal microprocessor or memory failure.

10. ON / OFF BUTTON

The following describes the different modes of operation for this button:

a. Depressing this button when the UPS is off, and the utility voltage is not present, or with the UPS input circuit breaker in the off position, will cause the UPS to DC start and run on internal battery until the ON/OFF button is depressed again.
b. Pressing this button while the UPS is on, and utility is present, will place the UPS into bypass mode.
c. Pressing this button when with the UPS input circuit breaker off, or when the utility voltage is not present, will turn off the UPS.

TO TURN UPS ON: CONNECT THE UPS TO UTILITY POWER AND TURN ON THE MAIN CIRCUIT BREAKER LOCATED ON THE REAR PANEL. DO NOT PRESS THE “ON” BUTTON LOCATED ON THE FRONT PANEL OR THE UPS WILL BE PLACED INTO BYPASS MODE.

TO TURN UPS OFF: TURN OFF THE MAIN CIRCUIT BREAKER LOCATED ON THE REAR PANEL AND DEPRESS THE "ON/OFF" BUTTON UNTIL THE UPS BEEPS AND WAIT FOR THE UPS TO SHUTDOWN AND TURN OFF (ABOUT 30 SECONDS).

11. TEST BUTTON

The following describes the different modes of operation for this button:

a. Pressing the Test button while in Green Mode will disable Green Mode.
b. Pressing the Test button while utility is present will put the UPS through a self test diagnostic.
c. Pressing the Test button while in battery mode will turn the battery Audible alarm off. Depressing it again will turn the Audible alarm back on.

AUDIBLE ALARMS

Audible alarm signals are divided into two different levels of alarm status. Category one alarms represent normal or correctable operational alarms. Category two alarms are sounded in the event of abnormal operation.

1. <u>Category one alarms</u>:

a. Two short beeps followed by three short beeps.

Notifies the user that the SG UPS is configured with the optional battery pack and is in BATTERY MODE.

- - - - - = SG UPS IS IN BATTERY MODE

b. A continuous short beep.

The SG UPS is operating from battery and is in a LOW BATTERY operation.

- - - - - - - - = SG UPS IS IN A LOW BATTERY CONDITION

c. One long beep prior to a short beep.

The SG UPS is in an OVER LOADED, OVER CREST CONDITION. Remove some load from the UPS output to correct this condition.

-- - = SG UPS IS IN OVERLOAD OR OVER CREST

d. One short beep is sounded when either the ON/OFF or TEST buttons are pressed and held. This notifies the user the associated actions have been initiated by the UPS.

- = WHEN SG UPS FRONT PANEL ON, OFF AND TEST BUTTONS ARE DEPRESSED.

e. One short beep is sounded when the SELF-TEST button has been pressed and held. This notifies the self test has been started.

- = WHEN SG UPS FRONT PANEL TEST BUTTON DEPRESSED.

2. <u>Category two alarms:</u>

a. Three short beeps indicate the SG UPS output voltage is out of proper operating range.

- - - = SG UPS OUTPUT VOLTAGE IS OUT OF PROPER RANGE.

b. Four short beeps indicate the SG UPS output frequency is out of proper operating range. The UPS must be repaired.

- - - - = SG UPS OUTPUT FREQUENCY IS OUT OF PROPER RANGE.

c. Five short beeps indicate the SG UPS is in an over-temperature condition. Check for proper UPS cooling fan operation or blockage.

- - - - - = SG UPS INTERNAL TEMPERATURE IS TOO HIGH.

d. Should the internal POWER UP SELF-TEST fail, the SG UPS will sound the following alarms denoting the failure mode:

* A continuous rapid beeping for about 5 seconds, then the SG UPS shuts down - The UPS output voltage is out of range.

- = UPS OUTPUT VOLTAGE IS OF RANGE.

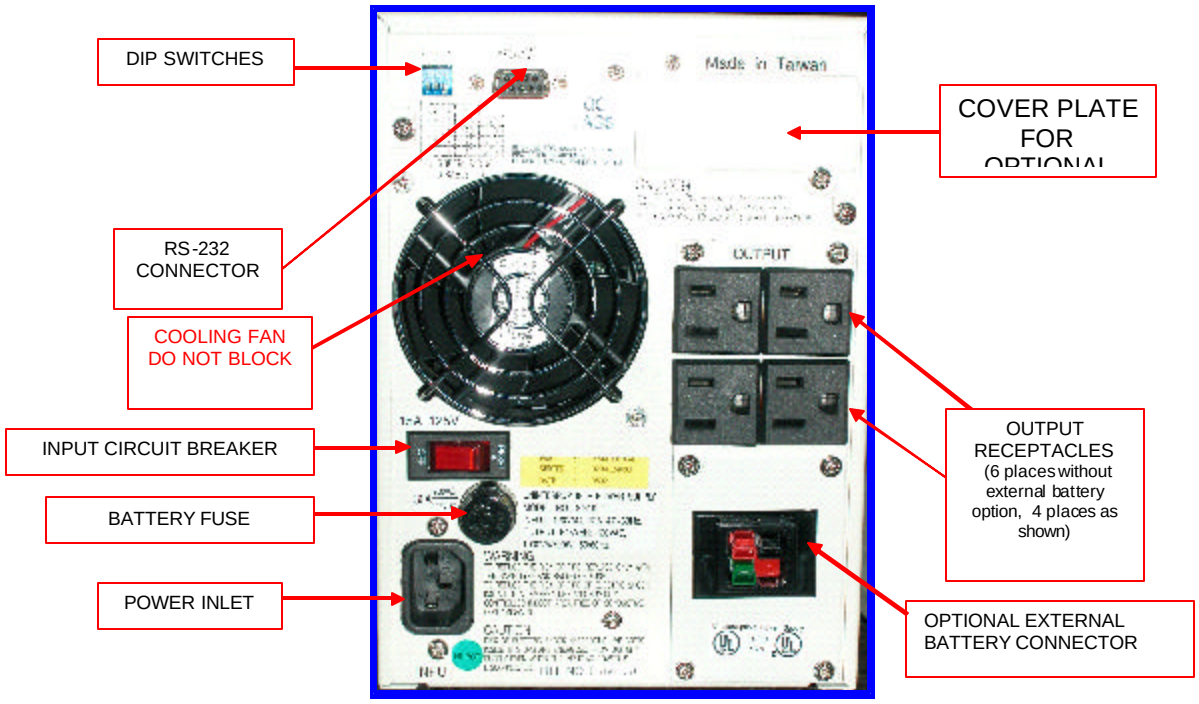
* A continuous rapid beeping for about 2 seconds and the SG UPS shuts down - The SG UPS performed a DC start, but there is no output frequency set in the UPS memory. Plug the UPS into your local utility power and turn the UPS on to set it for your local utility power frequency.

- - - - - - - - - - = The SG UPS performed a DC start, but there is no output frequency set in memory. Connect the UPS to your local utility power and turn on the UPS. Your local utility frequency is now set into the UPS memory. The next time the UPS is DC Started, its output frequency will be set automatically.

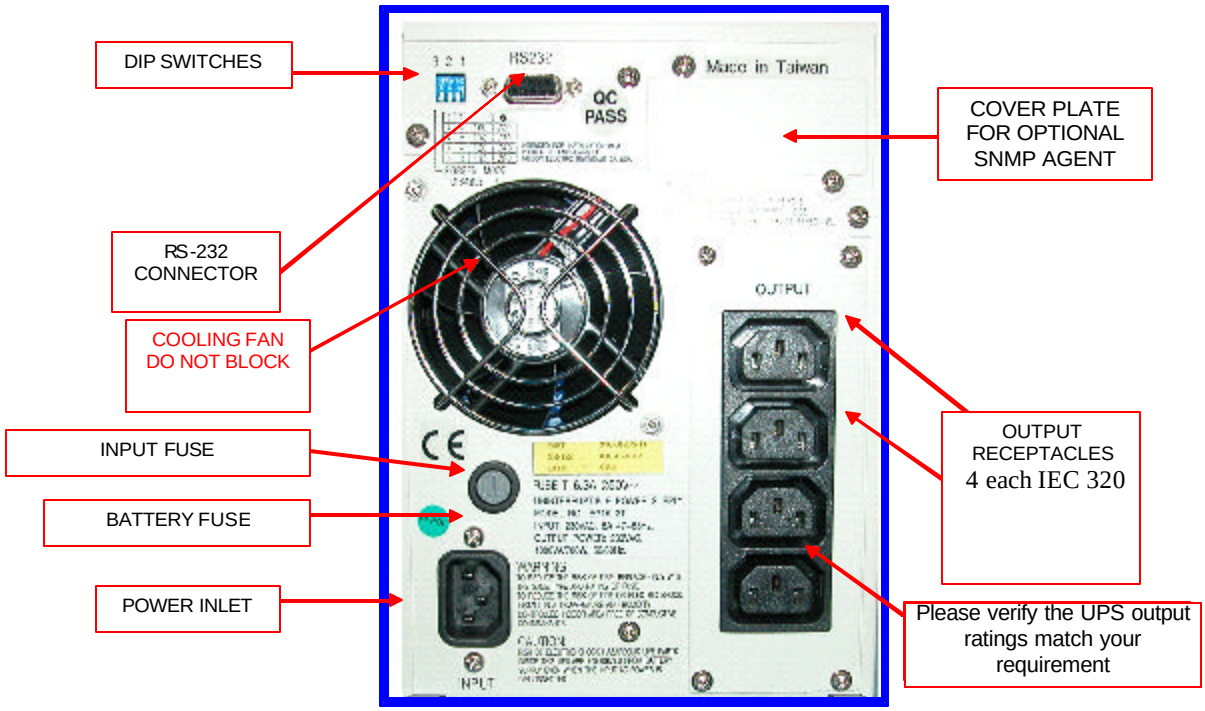
CHAPTER 4

REAR PANEL DETAILS

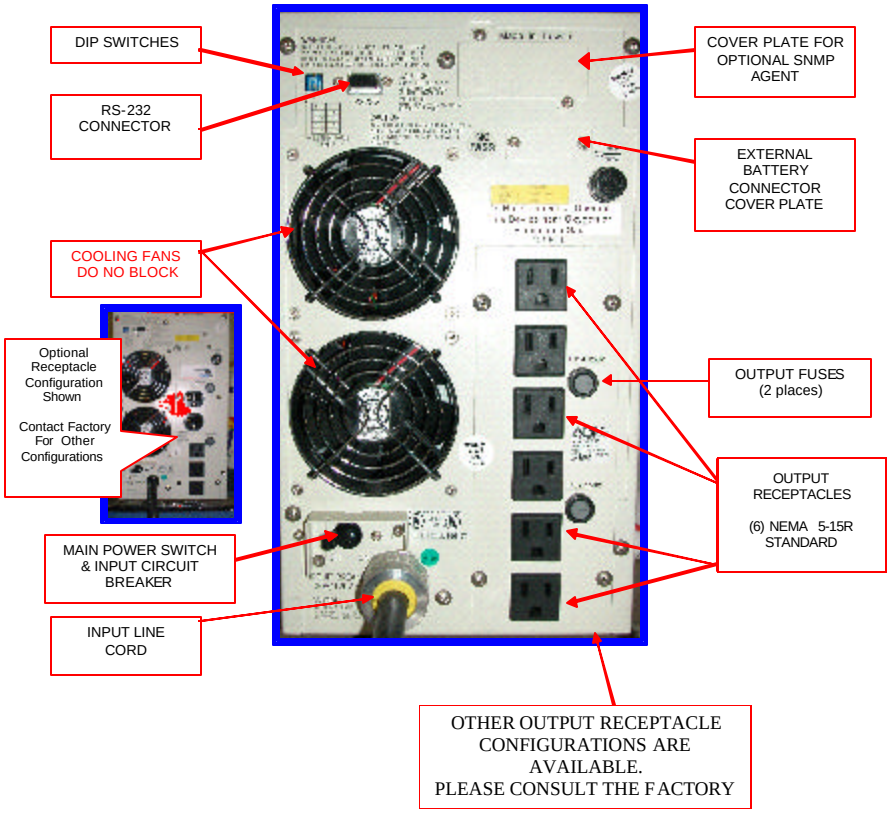
SG800-1T & SG1K-1T
Typical Rear Panel Overview



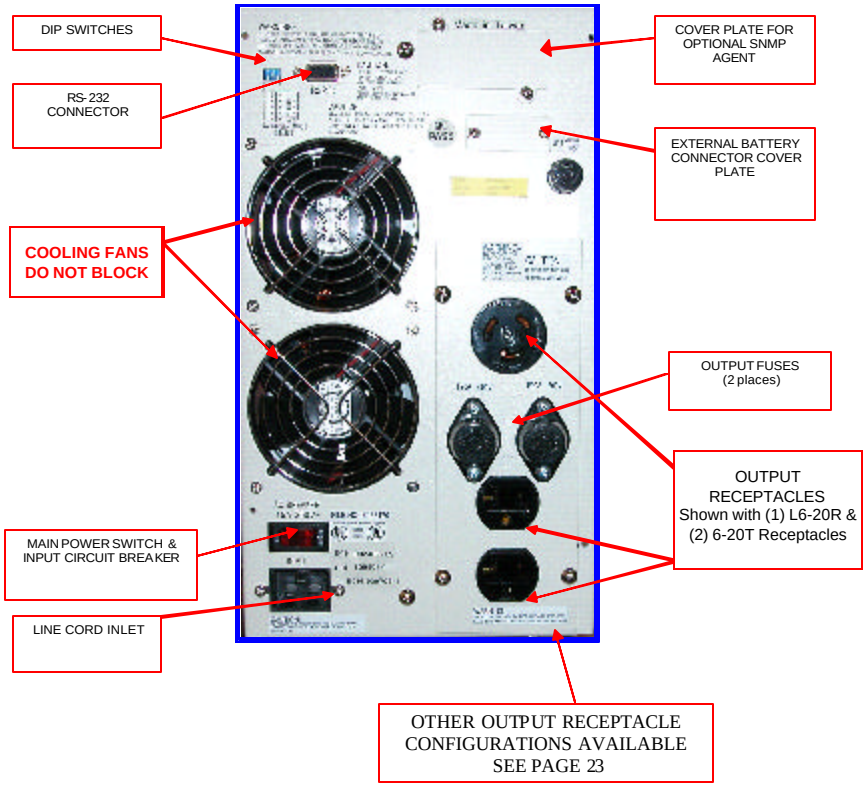
SG800-2T & SG1K-2T
Typical Rear Panel Overview



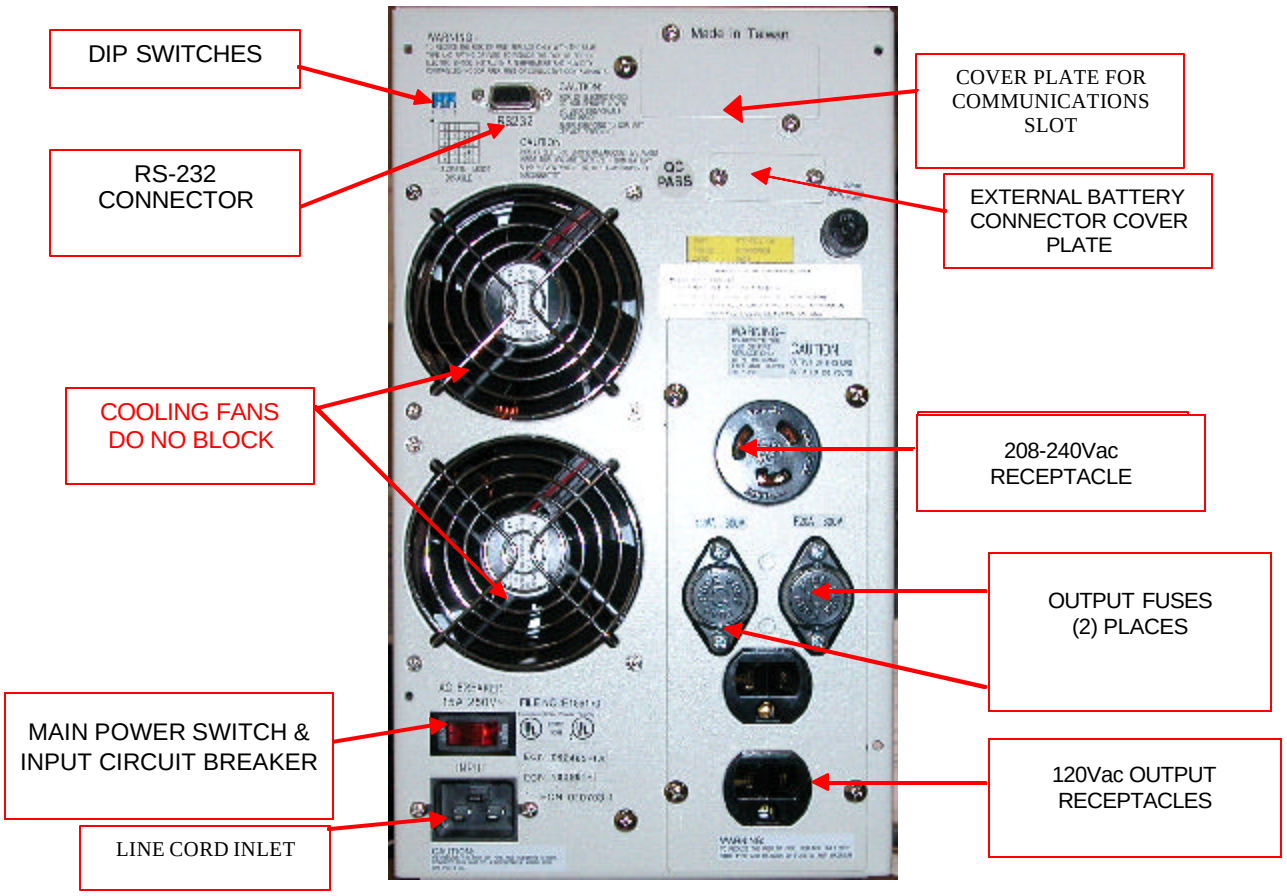
SG1.5K-1T, SG2K-1T & SG3K-1T
Typical Rear Panel Overview


DIP SWITCHES
RS-232 CONNECTOR
COOLING FANS DO NO BLOCK
Optional Receptacle Configuration Shown
Contact Factory For Other Configurations
MAIN POWER SWITCH & INPUT CIRCUIT BREAKER
INPUT LINE CORD
COVER PLATE FOR OPTIONAL SNMP AGENT
EXTERNAL BATTERY CONNECTOR COVER PLATE
OUTPUT FUSES (2 places)
OUTPUT RECEPTACLES
(6) NEMA 5-15R STANDARD
OTHER OUTPUT RECEPTACLE CONFIGURATIONS ARE AVAILABLE.
PLEASE CONSULT THE FACTORY

SG1.5K-2T, SG2K-2T & SG3K-2T
Typical Rear Panel Overview


DIP SWITCHES
RS-232 CONNECTOR
COOLING FANS DO NOT BLOCK
MAIN POWER SWITCH & INPUT CIRCUIT BREAKER
LINE CORD INLET
COVER PLATE FOR OPTIONAL SNMP AGENT
EXTERNAL BATTERY CONNECTOR COVER PLATE
OUTPUT FUSES (2 places)
OUTPUT RECEPTACLES
Shown with (1) L6-20R & (2) 6-20T Receptacles
OTHER OUTPUT RECEPTACLE CONFIGURATIONS AVAILABLE
SEE PAGE 23

SG2K-2TXI & SG3K-2TX
Typical Rear Panel Overview



SG2K-2TXI Output Configuration

The SG2TXI model provides three galvanically isolated 240Vac and 120Vac outputs. The two 120Vac receptacles are derived split phase from the isolated, center tapped 240Vac output. The center tap has been grounded to provide a derived neutral for both 120Vac outlets. Due to this, the 120V load is divided between the two 120Vac receptacles. The combined load on all outputs must never exceed 1400 wats.

SG3K-2TX Output Configuration

The SG3K-2TX model provides galvanic isolation only on the 120Vac outlets. The 120Vac outlets have been limited to a 1400 watt maximum output. The 208-240Vac output is derived directly from the UPS inverter, which is not isolated. The combined load on all outputs must never exceed 2100 watts.

CHAPTER 5

COMMUNICATIONS INTERFACES

RS-232 INTERFACE

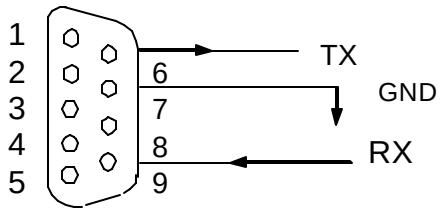
Location:

The RS-232 interface is standard on all SG series UPS models. The port is located on the UPS rear panel, via a DB-9 female connector.

Supported Protocols

UPSILON 2000 & SEC Smart Mon

BAUD RATE ------- 2400bps
DATA LENGTH---- 8 bits
STOP BIT---------- 1 bit
PARITY---------- None



DB-9 Connector Pin Assignment

Pin #	Function explanation	I/O
9	RS 232 Rx	INPUT
6	RS 232 Tx	OUTPUT
7	Ground	

CAUTION

When making a connection between a computer and the UPS RS-232 port, always use the green cable supplied with the UPS.

CAUTION

There are communications options that WILL DISABLE the RS-232 port and render it inoperable. The options are as follows:

a. Internal SNMP/HTTP agent option installed into the UPS communications option slot.

The following options WILL NOT affect the operation of the RS-232 port:

a. Falcon Opto Coupler based signal interface board installed to the communications option slot.

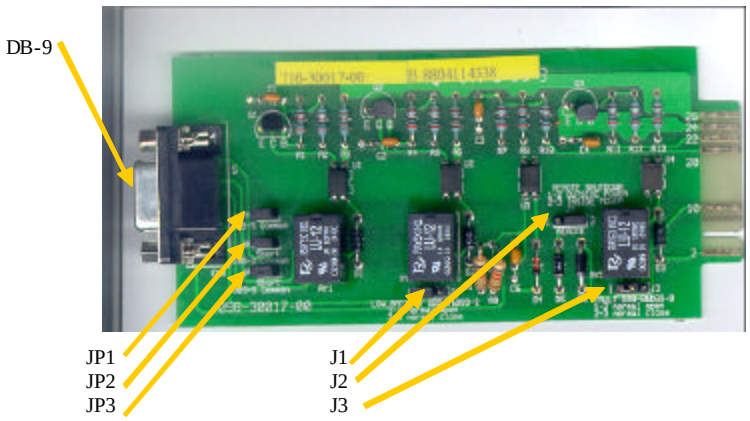
b. Any Falcon relay based, dry contact signal interface board installed into the communications option slot.

CAUTION

DB-9 Signals are not isolated and intended for connection to like RS-232 interfaces. DO NOT APPLY ANY OTHER VOLTAGES TO THESE PINS!

DRY CONTACT & OPTO COUPLER INTERFACE BOARD OPTIONS

Typical Falcon Dry Contact Relay Board



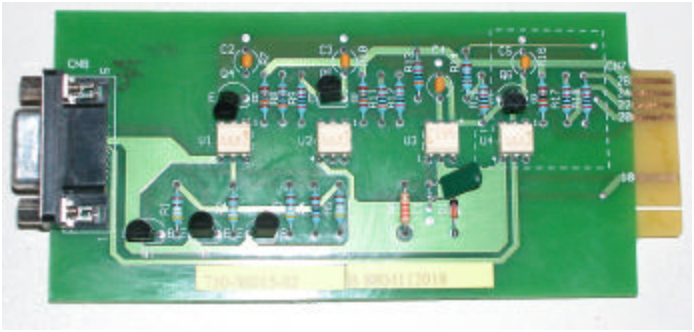
PIN & JUMPER ASSIGNMENT FOR THE FALCON UA88374 RELAY OPTION BOARD (no on-bypass signal)

PIN	DESCRIPTION
1	Low Battery (When UPS reaches low battery, contact activates) (J1, 1-2 short = N.O) (J1, 2-3 short = N.C)
2	JP2 shorted = Low Battery common & all other shorted JP commons JP2 open = common for low battery only
3	Utility Loss N.O. (At loss of utility voltage, contact activates)
4	Utility Loss N.C. (At loss of utility voltage, contact activates)
5	JP1 shorted = Utility Loss common & all other shorted JP commons JP1 open = Utility Loss common only
6	Remote Shutdown common
7	Remote Shutdown (J2, 1-2 short = outside power) (J2, 2-3 short = inside power) 1-2 shorted. Applying an external 12V signal across the DB-9, pins six and seven, while the UPS is on battery, will turn the UPS off. 2-3 shorted. Applying a short directly across the DB-9, pins six and seven, while the UPS is on battery, will turn the UPS off.
8	Alarm (Upon a UPS fault or failure the contact activates) (J3, 1-2 short = N.O.) (J3, 2-3 short = N.C.)
9	JP3 shorted = Alarm common & all other shorted JP commons JP3 open = Alarm common only

PIN & JUMPER ASSIGNMENT FOR THE FALCON UA88376 RELAY OPTION BOARD (with on-bypass signal)

DB-9F PIN & JUMPER ASSIGNMENTS	
PIN	DESCRIPTION
1	Low Battery (When UPS reaches low battery, contact activates) (J1, 1-2 short = N.O) (J1, 2-3 short = N.C)
2	JP2 shorted = Low Battery common & all other shorted JP commons JP2 open = common for low battery only
3	Utility Loss N.O. (At loss of utility voltage, contact activates)
4	Utility Loss N.C. (At loss of utility voltage, contact activates)
5	JP1 shorted = Utility Loss common & all other shorted JP commons JP1 open = Utility Loss common only
6	Remote Shutdown common
7	Remote Shutdown (J2, 1-2 short = outside power) (J2, 2-3 short = inside power) 1-2 shorted. Applying an external 12V signal across the DB-9, pins six and seven, while the UPS is on battery, will turn the UPS off. 2-3 shorted. Applying a short directly across the DB-9, pins six and seven, while the UPS is on battery, will turn the UPS off.
8	On Bypass or Alarm (Upon the UPS going to bypass or a UPS failure the contact activates) (J3, 1-2 short = N.O.) (J3, 2-3 short = N.C.)
9	JP3 shorted = On bypass, Alarm common & all other shorted JP commons JP3 open = On bypass, Alarm common only

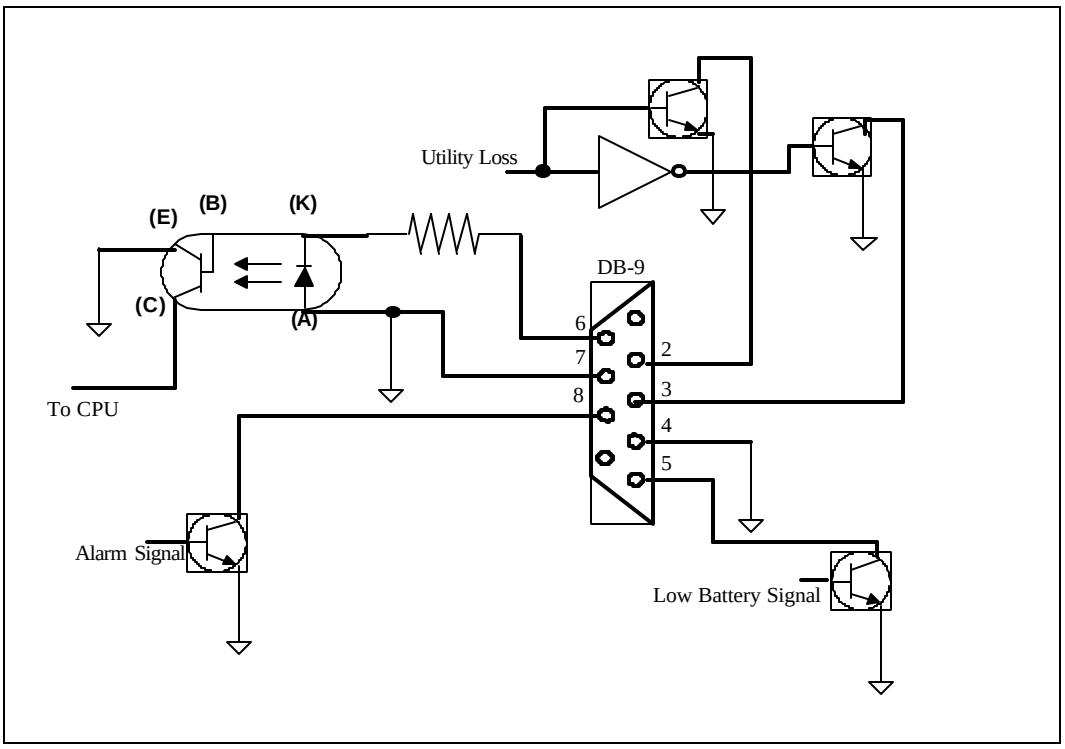
Typical Falcon Opto-coupler Interface Card



PIN ASSIGNMENT FOR THE FALCON
UA88373 OPTO-COUPLER OPTION BOARD
(no-bypass signal)

PIN	DESCRIPTION
1	Not Used
2	Utility Loss (N.O.) (Closes upon utility loss)
3	Utility Loss (N.C.) (Opens upon utility loss)
4	Common for pins 2, 3 & 5
5	Low Battery (N.O.) (Closes at low battery)
6	Remote Shutdown Applying a +5-+12Vdc voltage level for >500ms, while the UPS is on battery will shutdown the UPS
7	Not Used
8	Not Used
9	Not Used

OPTO Board Internal Circuitry



CHAPTER 6

Maintenance & Technical Support

1. **Care & Maintenance**
   Falcon® SG Series UPSs are designed to be maintenance-free. They can be cleaned with a damp cloth or non-abrasive cleanser, providing the UPS is turned off and the input plug is disconnected from the utility source.
   On a regular basis, check the vents to make sure they are kept free from accumulation of dust, dirt or lint.

2. **Battery Life vs. Temperature**
   For full battery life, keep the UPS close to an ambient temperature of 77ºF. The batteries should never be exposed to temperatures below 40ºF and above 104ºF.
   .

3. **Battery Replacement**
   This UPS contains sealed maintenance-free batteries (VRLA). When situated in a typical office environment, with the proper charging and limited cycling, the batteries can last many years. **In home, office or computer room environments, the batteries should be replaced every three to five years.**

WARNING

Never attempt to service batteries. High voltage exists within the unit, which could cause electrical shock. **Servicing of batteries should be performed or supervised by personnel knowledgeable of batteries and the required precautions**. Keep unauthorized personnel away from batteries.
When replacing the UPS batteries, use the same number and type of batteries.

NEVER

A. **NEVER** dispose of batteries in a fire, as batteries will explode.
B. **NEVER** dispose of used batteries or the UPS in the trash or landfill as it is against federal and state laws. **The UPS and Batteries must be recycled.** For UPS and battery recycling information, please contact our service department for the name and address of the nearest battery recycling facility.

CAUTION

A. Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
B. A battery can present a risk of electrical shock and high short circuit current. **REFER ALL BATTERY SERVICING OR REPLACEMENT TO A QUALIFIED SERVICE TECHNICIAN. NEVER ATTEMPT TO REPLACE THE BATTERIES YOURSELF.**

The following precautions should be observed by a qualified technician when working with batteries.

1. Remove watches, rings, or other metal objects.
2. Use tools with insulated handles.
3. Wear rubber gloves and boots.
4. Do not lay tools or metal parts on top of batteries.

4. **Storing the UPS and Batteries**

Should you need to store the UPS for a long period, fully recharge the battery just prior to storage and recharge the battery every 4 months by plugging the UPS into a power outlet. It is recommended that the batteries charge for 24 hours after long-term storage.

5. **FCC Considerations**

This equipment generates and uses radio frequency energy and if not installed and used properly in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. All models covered in this manual have been tested and found to comply with the limits for a Class A computing device, in accordance with the specifications in FCC regulations, Part 15, Subpart J, which are designed to provide reasonable protection against such interference**.**

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

a. Reorient or relocate the receiving antenna.
b. Increase the separation between the equipment and the receiver.
c. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
d. Consult the dealer or an experienced radio/television technician for assistance.

6. Technical Support

Your FALCON® Electric SG Series UPS is backed by one of the finest customer service teams assembled. Write, call, fax or email should you require technical assistance or service.

Falcon Electric Inc.
5106 Azusa Canyon Road
Irwindale, CA. 91706
Service 800.842.6940
Voice 626.962.7770
Fax 626.962.7720
Email: service@falconups.com
WWW.FALCONUPS.COM

Please have your UPS model, serial numbers and date of purchase on hand prior to your call. This information is located on the identification label on the rear panel of the unit. This information is essential in retrieving your unit's historical records. Should our service department determine service is required, you will be given a Return Material Authorization number (RMA) along with return shipping instructions.

The RMA number issued must appear on the outside of the shipping carton. The original shipping container must be used when returning any SG Series product. Falcon® Electric will not assume any responsibility for shipping damage. In the event of shipping damage, you will be notified of the damage and be instructed to file a claim with the freight carrier. You will be billed for all repairs caused by the shipping damage. You must submit a copy of our repair invoice to the carrier for reimbersment.

All units must be returned prepaid. The address and shipping instructions will be given to you at the time the RMA is issued.

7. Requesting Technical Information or Support

You may request technical information or support by email or telephone.

Please send your technical or support questions by email to:

SUPPORT@FALCONUPS.COM

You may contact a FALCON support engineer directly by calling the FALCON support line between 9:00 am and 4:00 pm PST.

800.842.6940

8. FALCON Web Support

Product data sheets, specification and owner's manuals are available in Adobe® Acrobat .PDF format on our corporate website.

WWW.FALCONUPS.COM

WARRANTY

GENERAL PROVISIONS

FALCON® ELECTRIC INC., hereby warrants product shipped under this agreement to be free from defective workmanship for a period of two years following date of shipment. This Limited New Product Warranty Agreement only applies to covered repairs to the product occurring within the United States and Canada.

EXCLUSIONS:

The following are not covered by the Falcon Electric Limited New Product Warranty:

1. DAMAGE DUE TO ACCIDENTS, FRAUD, INTENTIONAL NEGLIGENCE, MISUSE, IMPROPER INSTALLATION, UNAUTHORIZED ADJUSTMENTS, MODIFICATIONS, ALTERATIONS, DISCONNECTION, TAMPERING: Accidents or acts of nature or other events beyond the control of Falcon Electric, damage from impact, contaminants, fire, or water, misuse of the product such as sustained overloading, improper installation or operation, operation in an uncontrolled environment.
2. DAMAGE DUE TO IMPROPER INSTALLATION OR LACK OF MAINTENANCE: Lack of proper maintenance as outlined in the owner's manual.
3. NORMAL MAINTENANCE: Cleaning, replacement of leaking or outdated batteries.
4. DAMAGE DUE TO ALTERATIONS: Alterations by changing or adding to the product by any unauthorized personnel or service organization.
5. DAMAGE CAUSED BY OTHER THAN ORIGINAL EQUIPMENT PARTS. Any malfunctions caused by the use of other than Falcon Electric original equipment parts such as batteries, line cords and plugs, output receptacles, or any other part.
6. BROKEN OR TAMPERED WARRANTY SEALS: Falcon Electric will deem all warranties null and void in the event warranty seals are broken or show signs of removal or tampering.
7. CONSEQUENTIAL DAMAGES: This Limited New Product Warranty does not cover any consequential or secondary damages that may be suffered as a result of usage of the product or the need to repair or replace a warranted part except to the extent coverage of such damage is required by the state whose law governs the Falcon Electric Limited New Product Warranty.
8. REPAIRS BY UNAUTHORIZED SERVICE ORGANIZATIONS OR PERSONNEL: Otherwise covered repairs when the prescribed repair is not performed by the Falcon Electric Service Center or by a Falcon Electric authorized third party service organization.
9. LIABILITY FROM USE OF THE PRODUCT: Liability for damage to property or injury or death of any person arising out of the operation, maintenance, or use of the product weather.
10. Warranty void if the battery is allowed to discharge below the minimum battery cutoff point. To prevent such discharge, remove the battery fuse, or switch the battery disconnect to the off position when the unit is to be stored without the AC power being supplied to the UPS for more than two days. The battery must be recharged every three to four months when not in use.
11. This product is not recommended, and Falcon Electric Inc. will not knowingly sell this product, for use with life support and other designated “critical devices". ANY SUCH USE BY A USER AUTOMATICALLY VOIDS AND DISCLAIMS ANY AND ALL WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND EXPRESS WARRANTIES THAT THIS PRODUCT WILL CONFORM TO ANY AFFIRMATION OR PROMISE, FOR THIS PRODUCT AND THE USER AGREES THAT IN NO EVENT SHALL FALCON ELECTRIC INC. BE LIABLE FOR CONSEQUENTIAL OR INDIRECT DAMAGES.

LIMITS OF LIABILITY:

LIMITATION OF LIABILITY: THERE IS NO LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE UNDER THESE WARRANTIES INCLUDING BUT NOT LIMITED TO, LIABILITY FOR INJURY, LOSS OF LIFE, PROPERTY DAMAGE, LOSS OF USE, LOSS OF DATA, LOSS OF TIME, INCONVENIENCE OR COMMERCIAL LOSS, OR BREACH OF IMPLIED OR EXPRESSED WARRANTIES. ANY AND ALL SUCH LIABILITY IS EXPRESSLY EXCLUDED. IN NO EVENT SHALL FALCON ELECTRIC BE RESPONSIBLE FOR ANY AMOUNT EXCEEDING THE ACTUAL MARKET VALUE OF THE PRODUCT. Some states do not permit the exclusions of limitations of incIdental or consequential damages, so these limitations may not apply to you.

TRANSFER:

This Falcon Electric Limited New Product Warranty is not transferable in the event of the product ownership being transferred during the warranty coverage period.

ITEM COVERAGE:

Effective January 1, 2000, FALCON® ELECTRIC hereby warrants product shipped under this Agreement to be free from defective workman ship for a period of two years following date of shipment. Coverage under this Falcon Electric New Product Warranty Agreement commences with the date of shipment defined as the date on the Bill of Lading. If no Bill of Lading is issued, the date of shipment shall be shown on seller's shipping document. The Falcon Electric Limited New Product Warranties expire two years from the aforementioned commencement date. Falcon Electric Inc. reserves the right to make changes, additions, and/or other improvements in its products without incurring any obligation to install them on its products previously sold. This Warranty is valid for product as sold.

1. For product located in the continental United States and Canada deemed by Falcon Electric to be covered under this warranty, Falcon Electric will pay shipping costs associated with the return and repair of product under the following conditions only:
   a. Falcon Electric will pay shipping costs both to and from our U.S. Service Center for the first 30 days from the original date of invoice. During this 30 day period, Falcon Electric may elect to ship a new unit to replace the defective product.
   b. After the first 30 days and up to 90 days from the original date of invoice, the end-user is responsible for shipping costs associated with sending the defective unit to the Falcon Electric U.S. Service Center. Falcon Electric will pay shipping costs associated with returning the repaired product to the end-user. During this 60 day period Falcon Electric may elect to offer a loaner unit, providing the end-user agrees to pay for all shipping costs associated with transportation of the loaner unit both from and return to the Falcon Electric U.S. Service Center.
   c. All shipping costs for product submitted beyond 90 days of the original date of invoice is the responsibility of the end-user.

SG Series™ UPS PLUS® *800VA to 1.5kVA*

Model Number	SG800-1T	SG1K-1T	SG1K-2T	SG1.5K-1T
Nominal VA	800	1000	1000	1500

Electrical Input

Nominal AC Voltage	120V	120V	230V	120V
AC Voltage Range	87-140V	87-140V	170-275V	87-140V
Current-Amps	5.5	6.9	3.6	10.7
Frequency	50/60 Hz ± 5% (Auto – Tracking)			
Power Factor Correction	> 0.95			
Efficiency (Typical)	> 86%			

Electrical Output

Watts	560	700	700	1050
AC Voltage (Switchable)	100V 110V 115V 120V	100V 110V 115V 120V	200V 220V 230V 240V	100V 110V 115V 120V
Frequency	50/60 Hz (Auto Tracking)			
Frequency Stability	±0.3% (Battery Mode)			
Voltage Regulation	± 2%			
Step Load Change	± 7% for 100% load variation			
Harmonic Distortion	< 3% Linear Load, < 5% Non-Linear Load			
Overload	105% load for 50 Seconds			
Crest Ratio	3:1			

Battery

DC Voltage	36V			72V
Type	12V, 7AH Sealed Lead Acid Maintenance-Free			
Back Up Time @ Full Load @ 1/2 Load	9 Minutes 25 Minutes	6 Minutes 19 Minutes		11 Minutes 30 Minutes
Recharge Time	8 Hours to 90%			

Battery times are approximate.

Transfer Time

Line Fails/Recovers	Zero
UPS to Bypass or Reverse	< 4ms
After Overload	Auto Transfer to UPS

Electrical Connections

Input	6' Cord with 5-15P	6' Cord with 5-15P	6' Cord with Schuko or 6-15P	6' Cord with 5-15P
Output	(6) 5-15R	(6) 5-15R	(4) IEC 320	(6) 5-15R

Contact the factory for other input/output options.

Environmental

Operating Temperature	0º C - 40º C (32º F to 104º F)
Humidity	10% to 95% Non – Condensing
Altitude	7,000 Feet
Cooling	Low Velocity Forced Air Fans
Audible Noise @ 1 Meter	<45dBA / < 50dBA

Controls and Indicators

LED	Line, Inverter, Battery Reserve, Load, Bypass, Alarm, Crest, Battery & Load Capacity Level
Audible Alarms	DC Mode, Low Battery, Over/Under Voltage, Over/Under Frequency, High Temp., Over Load, Fault Alarm
Communications	RS-232 Serial Port (Bundled UPSilon 2000 Software)

Mechanical

Dimensions H x W x D inches (mm)	8.7 x 6.0 x 15.8 (220.9 x 152.4 x 401.3)		13.8 x 7.6 x 18.9 (350.5 x 193.0 x 480.0)
Weight lb. (kg)	33 (14.9)		68 (30.9)
Agency Listing	UL 1778, CUL, FCC Class A	CE available with Schuko plug only	UL 1778, CUL, FCC Class A

Available Options

Option A	60 Hz to 50 Hz Frequency Conversion
Option B	50 Hz to 60 Hz Frequency Conversion
Option C	SNMP/HTTP Network Card (Internal)
Option D	Standard Contact Closure Interface Card
Maintenance Bypass	Make-Before-Break External Wrap Around
External Battery Packs	Extended Run Time Battery Packs (minutes to hours)
Fast Battery Charger	Fast Charger internal to the Extended Battery Pack Cabinet (Required for battery times 2 hours or more.)

SG Series™ UPS PLUS® *2kVA & 3kVA*

Model Number	SG2K-1T	SG2K-2T	SG3K-1T	SG3K-2T	SG2K-2TXI	SG3K-2TX
Nominal VA	2000		3000		2000	3000

Electrical Input

Nominal AC Voltage	120V	230V	120V	230V	230V	
AC Voltage Range	87 – 140V	170 – 275V	87 – 140V	170 – 275V	170 – 275V	
Current – Amps	14.2	7.4	21.4	11.2	7.5	11.3
Frequency	50/60 Hz ± 5% (Auto – Tracking)					
Power Factor Correction	> 0.95					
Efficiency (Typical)	> 86%				> 85%	

Electrical Output

Watts	1400		2100		1400		2100	
AC Voltage (Switchable)	100V 110V 115V 120V	200V 220V 230V 240V	100V 110V 115V 120V	200V 220V 230V 240V	120V (700W each 5-20R)	208V 220V 230V 240V	120V (1400W Max.)	208V 220V 230V 240V
Frequency	50/60 Hz (Auto Tracking)							
Frequency Stability	± 0.3% (Battery Mode)							
Voltage Regulation	± 2%				± 5%		± 3%	
Step Load Change	± 7% for 100% load variation							
Harmonic Distortion	< 3% Linear Load, < 5% Non-Linear Load							
Overload	105% load for 50 Seconds							
Crest Ratio	3:1							

Battery

DC Voltage	72V	96V			
Type	12V, 7AH Sealed Lead Acid Maintenance-Free				
Back Up Time @ Full Load @ 1/2 Load	7 Minutes 20 Minutes	5.5 Minutes 15 Minutes	7 Minutes 20 Minutes	5.5 Minutes 15 Minutes	
Recharge Time	8 Hours to 90%				

Battery times are approximate.

Transfer Time

Line Fails/Recovers	Zero
UPS to Bypass or Reverse	< 4ms
After Overload	Auto Transfer to UPS

Electrical Connections

Input	6' Cord with 5-20P	6' Cord with 6-20P, L6-20P or Schuko	6' Cord with L5-30P	6' Cord with 6-20P, L6-20P or Schuko	6' Cord with 6-20P, L6-20P or Schuko
Output	(6) 5-15R or (3) 5-15R & (2) 5-20R	(6) IEC 320 or (1) L6-20R	(6) 5-15R or (3) 5-15R & (2) 5-20R	(6) IEC 320 or (1) L6-20R	(2) 5-20R & (1) L6-20R

Contact the factory for other input/output options.

Environmental

Operating Temperature	0º C - 40º C (32º F to 104º F)
Humidity	10% to 95% Non – Condensing
Altitude	7,000 Feet
Cooling	Low Velocity Forced Air Fans
Audible Noise @ 1 Meter	<50dBA

Controls and Indicators

LED	Line, Inverter, Battery Reserve, Load, Bypass, Alarm, Crest, Battery & Load Capacity Level
Audible Alarms	DC Mode, Low Battery, Over/Under Voltage, Over/Under Frequency, High Temp., Over Load, Fault Alarm
Communications	RS-232 Serial Port (Bundled UPSilon 2000 Software)

Mechanical

Dimensions H x W x D inches (mm)	13.8 x 7.6 x 18.9 (350 x 193 x 480)		13.8 x 7.6 x 30.0 (350 x 193 x 720)
Weight lb. (kg)	68.4 (31)	81.4 (37)	150.0 (68)
Agency Listing	-1T Models: UL 1778, CUL, FCC Class A -2T Models: UL 1778, CUL, FCC Class A; CE available with Schuko plug only		UL 1778, CUL, FCC Class A

Available Options

Option A	60 Hz to 50 Hz Frequency Conversion
Option B	50 Hz to 60 Hz Frequency Conversion
Option C	SNMP/HTTP Network Card (Internal)
Option D	Standard Contact Closure Interface Card
Maintenance Bypass	Make-Before-Break External Wrap Around
External Battery Packs	Extended Run Time Battery Packs (minutes to hours)
Fast Battery Charger	Fast Charger internal to the Extended Battery Pack Cabinet (Required for battery times 2 hours or more.)